ABSTRACT

There are still many mines found in parts of the world that are used for war. Many countries are contaminated by landmines. Especially conflict areas that have a massive impact on casualties. So it takes technology to minimize existing landmines, one of which is radar. One of the radars often used for landmine detection is Ground Penetrating Radar (GPR). Many studies use GPR as a data retrieval media which is then processed through signal detection methods.

In this final task research will be done landmine detection analysis on GPR using GPRMax simulation, then processed through MATLAB using GLCM method to detect depth distance and influence of landmine type in detection system. The test was carried out in several stages, starting with GPRMax simulation with landmine type and the specified distance to produce B-scan which was then processed through extraction on GLCM.

The test results show the GLCM method is capable of detecting landmine depth distances at a distance of 7.5 cm; 10 cm; and 12.5 cm with accuracy reaching 100%, at a distance of 5 cm with an accuracy of 33.33%, and at a distance of 15 cm accuracy of 0%. The influence of landmine type can be seen at a distance of 5 cm, where PMA-1 is the only mine that can be detected at that distance.

Keywords: *Ground Penetrating Radar* (GPR), *Landmine*, *Gray Level Co-occurance Matrix* (GLCM).